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ABSTRACT
                Research has been conducted regarding the linguistic
structure of children's language usage. There has not, however, been
an attempt to relate children's knowledge of vocabulary to their
teachers' use of vocabulary. The purpose of this study was to examine
the relationship between the vocabulary used by teachers and the
proportion of that vocabulary known by the children in their
classrooms. Eight kindergarten and eight first grade teachers from
seven schools in a north-central Florida community volunteered to
participate in the study. Language samples were tape recorded for
each of the teachers during their normal working day. The samples
were used to construct word lists and children were then tested for
their knowledge of words from these lists. Congruence scores were
derived on the basis of words particular teachers used and the
percentage of those words their children new. The high frequency
words used by teachers are on the Thorndike-Lorge list. The
independent variable contributing most to differences in congruence
scores was socio-economic background. The recommendation was made
that no efforts towards replication of the study be made because the
time required seemed excessive for the results obtained. The word
lists resulting from this study appear to be sufficiently reliable
that they can serve as a base for subsequent testing of children.
(Author)

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RELATIONSHIP BETWEEN
TEACHER VOCABULARY USAGE AND
THE VOCABULARY OF KINDERGARTEN
AND FIRST GRADE STUDENTS

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Summary

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tape recorded for each of the teachers during their normal working
day. The samples were used to construct word lists and children
were then tested for their knowledge of words from these lists.
Congruence scores were derived on the basis of words particular
teachers used and the percentage of those words their children
knew. The words were categorized according to frequency of usage
by the teachers and according to whether known or not known by
the pupils. In general, the high frequency words used by teachers
are listed on the Thorndike-Lorge most frequently used list. In
addition, the pupils tend to know a relatively large percentage
of the words. The vocabulary congruence scores were analyzed
according to race, socio-economic background, and grade level.
The independent variable contributing most to differences in
congruence scores was socio-economic background. Although there
were differences in congruence scores produced as a function of
race and grade level, the most influential effect was that of
socio-economic background. The recommendation was made that no
efforts towards replication of the study be made because the
time required seemed excessive for the results obtained. The
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There is a serious deficiency in our knowledge regarding the level
of vocabulary used in the classroom by teachers of the young child. It
has not been established whether a teacher must modify his spoken
vocabulary to communicate effectively with young children. Even if
there may be some rationale for thinking that modification would be
necessary when adults speak with children rather than with other adults,
it is not clear how or if the teacher adjusts his vocabulary level to
ensure comprehension. Apparently, advice freely given on how to talk
to children is based on personal experience rather than on empirically
derived data. Therefore, this study was designed to catalog words
actually used in kindergarten and first grade classrooms and the degree
to which those words were known to the pupils.

Review of Related Research

Emphasis has traditionally been placed upon the importance of
preschool training in language acquisition. In 1942 Dawe demonstrated
the feasibility of instituting preschool language programs in a group
of orphanage children who had limited contact with adults (Dawe, 1943).
Twenty years later Sears and Dowley (1963) reviewed studies related
to the effect of nursery school attendance on language development and
mentioned no studies concerned with the level of vocabulary and language
used by teachers at this level. They do refer to a statement made by
McCarthy (1945) who suggested that since nursery school results in
more contact with children, adult speech patterns might be "slower to
develop in children attending nursery school" (p. 850). The implication
is clear that the influence of adult speakers is expected to improve
the language skills of children. The assumption is also implicit that
much language learning will take place because of the child's ability to
supply meaning to new or unknown words by the context in which they appear.
Dale (1965), however, refers to an unpublished study showing that the
ability of children to supply word meanings from context is generally
overestimated. This suggests that it might be easy for a primary grade
teacher to talk above the vocabulary level of the children in her classes.
In fact, there is a distinct possibility that the teachers considered
"best" at this level would attempt to introduce new words so that the
children could infer their meaning from context.

Considerable effort has been extended in the linguistic analysis of
children's language (Loban, 1963; Strickland, 1962), but there were no
comparable analyses of teacher's language until Kean (1968) studied the
oral classroom language of second and fifth grade teachers. Kean found
that there was virtually no difference in the language behavior of
the teachers between the two grade levels. This may mean either that
the teachers at the lower grade level feel no need to modify their
oral language behavior to suit the language level of the youngsters
or that the teachers at the upper grade are working at a language
level somewhat less sophisticated than might seem appropriate for
their pupils. Kean made no analysis of the children's knowledge of
words or of their ability to comprehend the teachers so it is not
clear which alternative is more reasonable.

Results of a study by Strickland (1962) offer some support regarding non-congruence between materials prepared for children and children's language patterns. She reported that the level of language usage found in typical pre-primers was lower than that characteristically used by the children. She did not investigate the level of vocabulary found in the books or used by the children. Strickland emphasized that "the emphasis on words and word control in children's textbooks has over-shadowed concern for the arrangements in which the words have been set. The current generally accepted plan of restricting the vocabulary of children's books to words which occur most frequently in word lists compiled almost a generation ago seems unrealistic and detrimenta in view of the wide vocabulary to which children react today . . ."(p. 3). Unfortunately, Strickland was concerned only with "non-deprived" children for whom the statements are clearly applicable. It is not clear how accurate the statements are when applied to culturally dis-advantaged children or to children from varying cultural backgrounds.

Hess and Shipman (1965) investigated the language which mothers used in talking with their children. A sample of Negro mothers and their four-year-old youngsters was used. The results indicated that language complexity is a function of social class. The use of abstract words varies with economic level, with the middle-class mothers tending to use more abstract words and more complex syntactic structures than the lower-class mothers. Hess and Shipman concluded:

"The picture that is beginning to emerge is that the meaning of deprivation is a deprivation of meaning--a cognitive environment in which behavior is controlled by status rule rather than by ~~ention to the individual characteristics of a specific situation ⅃ one in which behavior is not mediated by verbal cues or by ceaching that relates events to one another and the present to the future" (p. 835).

Dale (1965) found that words known by youngsters varied as a function of social class. It is important to note that the variation is not only with respect to vocabulary size but also with respect to the kinds of words which are known (Dale, 1967, personal communication). One can readily imagine the conflict which might appear when a "deprived" youngster approaches a "middle-class" teacher for information.

Peisach (1965) found a "language barrier" between the middle-class teacher and the lower-class child. The barrier was largest in the higher elementary grades. One reason for not finding more discre-pancy at the lower grades may be due to the methods she used for measuring the difficulty level of the teachers' speech. At the lower grade levels a modified "cloze" procedure was used. Rather than omitting every fifth word, which is the usual technique, she simply omitted the last word of each sentence. The child's task was to supply the missing word. The degree of constraint introduced by this procedure is somewhat higher than by the usual method and the interpretation of the difficulty level of the material might be questioned. The indications, however, are clearly in the direction of a communication or language gap between the teachers and pupils.

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It is clear from published material about the language usage of
teachers at the elementary level that there is need for analysis of
what the teachers do as well as what the children are able to comprehend.
That is, much of the research has studied the children's capability to
understand what is presented to them in the form of written material.
Some research has been done with the way mothers speak to their children
but there has been very little systematic study of the teachers' use
of language in the classroom. There has apparently been no study of
the kindergarten and first grade teacher's classroom vocabulary usage.
This study was designed to investigate the vocabulary used by the
teacher during a normal classroom day and further to determine whether
or not the children know the meaning of the words used by their teachers.

Since the study was designed primarily as exploratory in nature,
only two general questions were specified. These questions were:
1) What is the general vocabulary used by classroom teachers in the
kindergarten and first grades; and 2) What is the extent that words
used by the teachers are known to the pupils? In addition to these
general questions, more specific questions were asked related to
the effects of teachers' social class background, race, and grade
level on their ability to "match" their vocabulary output to the
child's word knowledge. A major contribution of this st is seen
as the tabulation of words used by teachers at the kindergarten and
first grade levels and the assessment of children's knowledge of
those words.

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Method and Procedures

Sample.   Seven schools in Alachua County (North Central Florida)
were selected on the assumption that they were fully integrated in both
t achers and pupils. It is the policy of the Alachua County School
System that teachers cannot be conscripted to participate in research
so the project was fully explained and volunteers solicited. Approxi-
mately 40 kindergarten and first grade teachers heard the explanation
and of these, 30 volunteered to participate. Twenty-four of the
teachers were then selected from the volunteers on the basis of their
race (Negro or Caucasian) and social class (based on father's occupation).
An appointment was then made with each of the teachers to do the
recording. After data collection was begun, several teachers from cne
of the schools declined to participate. There is no apparent explanation
for this, but it tended to unbalance the sample on the variable of
teacher's race. All of the teachers who declined were Negro. The
sample was thus reduced to 17 teachers with only 3 Negro teachers. 2
kindergarten and 1 first grade. The variable of socic-economic back-
ground was less affected and the balance between lower and middle class
was approximately maintained. We then dropped one of the white-middle-
socio-economic background teachers so that we had a total of 16
teachers. It was decided to pursue the project, both fall and spring
testing, with these 16 teachers. Unfortunately, at mid-year one of
the teachers whose fall data was completely analyzed moved away. In
the process of finding a comparable replacement, we added 3 new
teachers to the sample. This meant that for the spring analysis there
were 10 kindergarten and 8 first-grade teachers in our sample. Of
these 18 teachers, 15 had participated from the beginning of the study.

Children were selected from each teacher's classroom for testing
of word knowledge. In selecting the children, an attempt was made to
maintain balance on socio-economic level, race, and sex. For the fall
testing, 6 children from each of the classrooms were selected. We
were able to maintain approximate balance on the dimensions of socio-
economic level and sex but were unable to do so on the dimension of
race. For the spring testing, we selected as many of the original
6 from each classroom as possible and then selected 2 more in an
attempt to adjust the balance. In some cases we were able to do so,
but there were still some combinations of teacher characteristics
and pupil characteristics we were unable to locate. For example, there
was only one white pupil in the classrooms of the black teachers. This
meant that it was impossible to maintain complete balance for all of
the desired independent variables.

Determination of Socio-Economic Level.   All classifications of
socio-economic levels for both teachers and children were done
according to Duncan's (1961) procedure. Duncan determined that
classifications made on the basis of the occupation of the head of
the household produced as accurate a rating as when multiple criteria
were used. The teachers' fathers' occupations were used and these
were determined by simply asking each teacher what her father's

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occupation was. It is important to note that two assumptions were
made to justify this procedure. It was first assumed that all of
the teachers would be classed at the same socio-economic level if
their present occupation was used for the determination. It was
then assumed that one's socio-economic background would have an
influence on subsequent behavior and language usage and that this
influence would be stronger than that expected from the move into
the teaching profession.

Duncan (1961) indicated that one would expect to make some
misclassifications by using only the occupation of the head of the
household. Most of these errors would be expected at the juncture
of "manual" and "white collar" classifications. We would expect to
misclassify only 10.6 percent of white collar workers and 12.1
percent of manual workers (Duncan, 1961, p. 159). In the case of
the teachers used in this study, the error should be minimal since
most of them came from backgrounds which were clearly in one category
or the other.

The socio-economic status of the children was determined in the
same way as it was for the teachers. Again, we anticipated minimal
error in the classification of middle and lower class status.

Method of sampling teachers' vocabulary. In order to interfere
as little as possible with the classroom teacher's normal activity,
no outsider was present in the room during the sampling periods. This
was accomplished by using an FM wireless microphone (Sonar SFM-304).
The transmitter measured 27 mm by 63 mm by 75 mm in size so was
relatively easy for the teacher to carry in an apron or dress pocket.
In some cases, the teachers forgot to wear clothing with a pocket
and the transmitter was attached to a belt. The microphone was
clipped to the teacher's dress and was small enough that it was hardly
noticeable. The size of the microphone was only 13 mm by 20 mm by
8 mm with a clip measuring about 42 mm in length. The microphone
assembly was so inconspicuous that a number of the teachers commented
that they had "really forgotten" they were wearing it. A portable
FM receiver (AIWA AR-142) and portable tape recorder (AIWA TP-713)
were located outside the classroom during the recording session.
Each teacher was recorded at random intervals during an entire
teaching session. Approximately one and one-half hours of recording
were made for each teacher.

The tape recordings were then transcribed and the typewritten
transcripts were carefully checked for accuracy. No effort was made
to ensure that the materials were correctly punctuated or para-
graphed but only to ensure that all words used were included in
the transcript. The words used on the transcripts were then listed
and frequency counts made for each teacher. These lists were care-
fully checked for accuracy and then combined into two lists, one for
kindergarten and one for first grade, including all of the words
used and their frequency of occurrence.

Construction of children's vocabulary tests. There were two needs
to be met in this study by the vocabulary test lists for the children.
The first need was to obtain an estimate of the proportion of the words
used by a teacher which were known to that teacher's pupils. The
second need was to obtain estimates of the child's ability to supply
adequate meaning for words generally used by teachers at the kinder-
garten and first grade level. In order to meet both of these needs
it was necessary to include in each test words which were used by
other teachers as well as by a child's own teacher. We constructed
ten lists of 50 words each for kindergarten and ten lists of 50 words
each for first grade. The words were sampled randomly from the lists
of all the words used by teachers for each of the two grade levels.
Using the technique of sampling randomly, regardless of frequency of
occurrence of the individual words on the lists, meant that some words
might be missed and not appear on any testing list, but it also meant
that a representative vocabulary used by teachers in our study would
be tested on the children.

The word lists were assigned randomly to the children with the
only restriction that each list be used about the same number of times.
This meant that every word on the lists was tested at least four times
in the fall and at least five times in the spring. Occasionally, due
to random sampling a word appeared on more than one list and there-
fore was tested more times than other words.

Procedure for testing children's knowledge of words. Each child
was tested individually. The procedure used was to simply ask the
youngster if he knew what a given word meant. If he responded with
"yes" he was asked what the word meant. The reason for using both
techniques was to determine if, indeed, simply asking the child if he
knew a word would produce a valid indication of his knowledge of the
word. It is interesting that even when the child was asked what a
word meant the testing could be done in less than a half hour for
most of the children.

The children's responses to the vocabulary items were scored as
correct if the child could provide any meaningful referent to the word
or if he used the word in a meaningful way. Some examples may help
to clarify the criteria: "head" - if the child pointed to his head,
we scored the word as known; "tag" - if the child pointed to a tag or
said "it looks like a label," we scored the word as known; "wish" -
"I wish I had a new dress;" "tie" - "like I can't tie my shoe;"
"most" - "like the most money would be rich;" "when" - "when will
you come back?" Since the purpose of the testing was to classify
words as either known or unknown every effort was made to get a
maximum response from every child without actually providing the
answer for him.

General design of the study. The study was cast in the form of
a five way factorial with independent variables of teachers' social
class (middle and lower), teachers' race (Negro and white), children's
social class (middle and lower), children's race (Negro and white),

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and grade level (kindergarten and first grade). As sampling proceeded,
it became obvious that maintaining the balance of the original factorial
design was impossible. Every effort was made to locate suitable
persons for maintaining the balance but some cells in the design simply
could not be filled. Because of the complete absence of data in some
cells and the extreme imbalance of sample sizes in other cells, a
five way analysis of variance was inappropriate. The technique of
"Applied Multiple Linear Regression" as outlined by Bottenberg and
Ward (1963) was chosen to make an overall analysis of the data.

Description of statistical methodology used. The method outlined
by Bottenberg and Ward (1963) is applicable to a wide variety of
problems. This is primarily because of their claim that "All problems
involving mutually exclusive categorical membership have the same
essential research question, 'Are there differences in the level of
criterion values which correspond to the membership in mutually
exclusive categories?'"(p. 30). This means that any problem where
typical analysis of variance categorizations have been made by
specification of independent variables can be analyzed by use of
the multiple linear regression technique outlined here. The procedure
for answering the research question is relatively straightforward
and consists of "...comparing (a) the results of an attempt to
estimate, or predict, criterion values from a linear combination of
the vectors representing the various categories with (b) the results
of a comparable effort in which no account is taken of membership
in these categories " (Bottenberg and Ward, 1963, p. 30). If a
knowledge of the category membership leads to a reduction in the
prediction error estimates then the inference may be made that there
are differences in criterion level as a result of category membership.
If, on the other hand, a knowledge of category membership does not
lead to a reduction in prediction error, then the inference is drawn
that any differences in criterion scores are trivial or nonsignificant.
This lack of significance may be interpreted in the usually accept-
able statistical way by saying that the differences in criterion
scores could be considered as a chance occurrence and not likely to
occur with any degree of consistency.

The principle advantage of using the method outlined here is that
no assumptions are made regarding the size of sample in each of the
categories. Although there is an implicit assumption that the overall
size of the sample must be large enough to provide reliability, the
demands are not so exacting as in the more traditional analysis of
variance. According to Ward (1969, personal communication) the
technique is relatively insensitive to variations in sample sizes
by categorizations as well as to completely empty cells. The
traditional analysis of variance can, of course, not tolerate empty
cells and is quite s 'sitive to differences in within cell or
category sample size.. A complete and detailed account of the
technique will be found in Bottenberg and Ward (1963) and Ward,
Buckhorn, and Hall (1967).

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Results and Discussion

Two aims were set for this project. One was to catalog the general
vocabulary used by kindergarten and first grade teachers during normal
classroom activity and to determine if that vocabulary was known to
their students. The other aim was to assess the effects of socio-
economic background, race, and grade level of both teachers and pupils
with respect to the degree of congruence in words used by teachers that
were known to their students.

<u>Words used by kindergarten and first grade teachers</u>. The total
number of words used and the number of different words used by teachers
in this sample are shown in Table 1. A total type-token ratio was com-
puted by dividing the number of different words used by the total
number of words. The ratios are presented in Table 1. It is obvious
that there is a great deal of variability in both the total output of
the teachers and also in the number of different words used during
the sampled period. This, of course, produces some variability in the
type-token ratios among the teachers. Since there is a tendency for
the length of the language sample (in number of words rather than in
time period sampled) to affect the type-token ratio (Johnson, 1946)
it is difficult to make a strict interpretation of these ratios.
However, since the sampling interval was controlled it is possible
to make the interpretation that during a given period of time, some
teachers produce a great deal more variability in their word usage
than do other teachers. On the other hand, it may suggest that the
teachers who produce the comparatively low type-token ratios are more
rigid than those who produce the higher ratios (Johnson, 1946). Neither
of these hypotheses or interpretations could be adequately tested in
this study but there is certainly a question for further investigation
implicit in the variability.

The words used by teachers were categorized according to frequency
of usage in an attempt to increase useability of the lists. Words used
one or more times per thousand words are shown in Appendix A. The
words have been arranged alphabetically with the results of both the
fall and spring testing for both kindergarten and first grade children.
The values shown in the table represent the proportion of children
tested on a given word who could supply an adequate definition of that
word. Since the words for testing were sampled randomly from a list
including <u>all</u> of the words used by <u>all</u> of the teachers there is an
occasional word for which we have no test data. These words are
included in the list but there is, of course, no information as to
the children's knowledge of these words. Generally, the data on
children's knowledge of specific words represent responses from seven
to twelve children although there are a few words which were tested
with only four to six children. These differences occurred because of
the random sampling technique used to assign words to the children's
test lists and because of the random assignment of lists to children
for testing. Generally, however, the results of testing may be con-
sidered stable for our sample.

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Table 1. Total number of words and number of different words used by kindergarten and first grade teachers for randomly selected time periods (45 minutes in fall and 15 minutes in spring).

Teacher's Social Class	Race	Total Output		Number of Different Words		Total Type-Token Ratio	
		Fall	Spring	Fall	Spring	Fall	Spring
Kindergarten							
Lower	N	2608	1249	355	197	.1361	.1577
Lower	N	3023	1090	488	253	.1614	.2321
Lower	W	1964	753	383	170	.1950	.2258
Lower	N		1493		241		.1614
Lower	W	4223	1024	487	215	.1153	.2096
Middle	N		1450		269		.1855
Middle	W	3281	738	556	242	.1695	.3279
Middle	W	5365	1182	636	304	.1185	.2572
Middle	W	2975	1197	408	280	.1371	.2339
Middle	W	3023	1553	556	329	.1839	.2118
First Grade							
Lower	N	4831	1196	469	244	.0971	.2040
Lower	N		628		194		.3089
Lower	W	2942	1662	410	301	.1394	.1811
Lower	W	5382		412		.0766	
Middle	W	4395	1632	455	325	.1035	.1991
Middle	W	4400	1244	456	277	.1036	.2227
Middle	W	3990		454	230	.1138	.2366
Middle	W	4420		432	232	.0977	.2437
Middle	W	2780	1556	413	345	.1486	.2217

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Further evidence of the stability of the tests is shown by the
magnitude of the internal consistency estimates. Kuder-Richardson
(formula 21) estimates of the reliability coefficient were computed.
The reliability coefficient was .84 for the fall testing and .80 for
the spring testing. The computation procedure used produces estimates
of the lower limit for the split half reliability coefficient. What
this means is that if all possible split half coefficients were
computed, the lowest would be at least as high as the Kuder-Richardson
reported here. Test-retest coefficients from fall to spring were
computed. These would be expected to be slightly lower than other
estimates for two reasons. First, the time period intervening between
testings produces error variance which is not evidenced in a single
testing period. This variance would be expected to lower the coefficient.
Second, the two forms of the vocabulary tests, although overlapping,
were not identical. This would be expected to produce error variance
which would lower the coefficient. A coefficient of .68 was obtained
for the vocabulary test scores from fall to spring which is reliably
different from a correlation of 0 ($p < .01$, $N = 49$). The vocabulary
ests used here may be considered adequate with respect to reliability
and stability of measurement.

It is important to note that almost every word included in the
high frequency list appears on the Thorndike-Lorge list of 500 most
frequently occurring words (Thorndike and Lorge, 1944, pp. 267-268).
The exceptions seem to be rather specialized school words such as
"clean," "count," "everybody," "nice," "plus," "quiet," and "space."
This does not mean that teachers' use of vocabulary has not changed
since 1944 but it is clear that the most frequently used words
catalogued by Thorndike and Lorge are the same words used most
frequently by teachers in our sample. The reason for this seeming
lack of change in language can only be inferred but an examination of
the high frequency word list suggests that many of the words are
the type essential to any verbal communication and would not be too
likely to change no matter how long a time interval was s udied. It
is also important to note that the words in the high frequency list
are almost all known to the children in this sample.

Words used with a frequency of once or less per thousand words
(low frequency words) have been divided into three lists. The first
list (Appendix B) includes low frequency words which were known to
two-thirds or more of the children tested on those words. These
words may be considered to be known to children in our sample. The
criterion of two-thirds may seem rather arbitrary but was selected
because it has been used in a series of other studies (Dale, circa
1960, Dale and Chall, 1948). The second list (Appendix C) includes
low frequency words which were known to less than two-thirds of the
children tested on these words. The third list (Appendix D) includes
low frequency words for which no test data were collected.

The primary advantage of having word lists such as these is
not that they provide a definite guide for teaching children words
they do not know but that there is probably an advantage in the

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teacher's knowing what words children are least likely to know. For
example, the kindergarten teacher just beginning the year with a new
group of students might consider checking the group for their under-
standing of words such as "about," "again," "away," "but," "now,"
"or," and "which." If it became obvious to the teacher that the
children were unable to understand or to use these words her next
move might be to actively teach the children what the words mean and
how to use them. This is not to suggest that children should
automatically be taught any word they are unable to define but only
that if there are words not known to the children which are commonly
used by their teacher and which are important for adequate communication
then teaching such words to the students would probably be advan-
tageous.

Comparison of testing methods. An important methodological
issue was raised in the procedure section of this paper. The issue
relates to techniques for testing the young child's word knowledge.
Dale (1967) has stated that "simply asking a youngster if he knows a
given word works pretty well." This technique has possible flaws.
First, the child may not tell the truth when he responds, and second,
he may not realize that even though he has heard a word, he cannot
define it. Only further questioning will reveal if the child can
actually define the word. The technique for testing was to simply
ask a youngster if he knew a given word. If the child said, "yes"
he was then asked what the word meant. The reason for testing in
this way was so that the accuracy of the more rapid method of simply
asking a child if he knew a word could be assessed. Two important
facts were discovered which deserve some discussion.

The first important finding was that a fifty-word vocabulary
list could be tested for in less than thirty minutes for most children.
This finding is important since it opens the doors to more extensive
testing than is typically done. The testing time applies to both
readers and non-readers and to both kindergarten and first grade
children. The time for testing includes both testing techniques; that
is, the children were asked if they knew a word and then were asked
what it meant. Children were encouraged to talk about a word and to
tell what they knew about the word so that the tester could be
absolutely sure that the child either knew or did not know the meaning
of that word. Even with the extended child talk, the testing time was
not markedly increased.

The second important finding is that there is a statistically
reliable difference in the test scores as a function of the testing
technique. Children, although remarkably honest in their own appraisal
of whether or not they know a word, do tend to say they know the meaning
of words they do not. The mean difference or mean number of times that
children said they knew the meaning but were unable to supply an adequate
definition at the first grade level was 1.98 for the fall testing. The
difference is reliably different from zero ($\underline{t}$ = 6.60, n = 48, p < .01).

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What this means is that children may honestly think they know what a
word means but be unable to supply a meaningful referent for that word.
There is the possibility that such a word forms a part of what might be
considered the child's receptive vocabulary and not of his expressive.
It is difficult to say with certainty that this is actually the case
but at least the notion has some merit in that, if one can trust the
child's appraisal, upper limits of the child's ability to understand
words said to him can be established. The mean number of times that
children at the kindergarten level said they knew the meaning of a
word but were unable to supply an adequate definition was 4.08 for
the fall testing. This is somewhat higher than the mean for the first
grade children and the difference is also statistically reliable
(t = 6.18, n = 48, p < .01). The fact that the kindergarten children
tend to say they know more words which they are then unable to define
than do the first grade children is consistent with the notion that
children learn a receptive language before they learn to produce
equivalent language. Indeed, the result is quite consistent with
Dale's (1958) analysis of the growth of the child's vocabulary. He
suggests four stages through which growth of vocabulary moves. These
are: (1) the child is sure he has never seen (heard) the word before;
(2) he has seen (heard) the word but does not know its meaning;
(3) he can place the word in a word classification; and (4) he knows
the word accurately. The testing technique of simply asking the child
if he knows a word would distinguish category one from the other
three. By further questioning a more refined distinction could be
drawn among all four of the categories. The results indicate quite
clearly that simply asking a child if he knows what a given word means
is likely to produce results with a bias to overestimate the child's
word knowledge. It must be emphasized that the mean overestimate for
the first grade child is actually very small (1.98 words) with a very
small variability among children. What this means is that for most of
the first grade children tested in this study, the scores will be very
nearly accurate. For kindergartners, however, the mean overestimate
is somewhat larger (4.08 words) with more variability. Some of the
ki dergartener's scores would be very badly estimated while others
would be very precise. It is difficult to tell which direction any
particular youngster's score may go until he has been tested. The
time saved by simply asking a youngster if he knows a particular word
is more apparent than real; particularly when the inaccuracy of the
scores at this level is considered. Inasmuch as fifty words can be
tested in less than thirty minutes using the longer technique, it
seems unreasonable to use the shorter and more inaccurate technique.

    Results of the congruence score analysis. Three independent
variables for teachers and pupils were analyzed for congruency. These
variables were race, social class, and grade level. All of the
statistical analysis done for this sample was by use of the multiple
linear regression as described earlier in Chapter 2. The probability
level set for acceptance of statistical reliability was p < .05 for
all analyses in this section. Congruence scores were used as the
dependent variable and were computed in the following way: All of

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the words on a given child's test which were used by his teacher were
scored as right or wrong. These words were then totaled and the per-
centage of right answers was computed. This percentage was used as
the congruence estimate. The congruence, therefore, represented all
of the words a child was tested on which his teacher had used during
the sampled period.

Table 2 shows the effect of teacher race and social class.

Table 2

MEANS AND STANDARD DEVIATIONS OF CONGRUENCE

SCORES BY TEACHER RACE AND SOCIAL CLASS

Teacher Social Class	Teacher Race								
	Black			White			Total		
	Mean	S.D.	n	Mean	S.D.	n	Mean	S.D.	n
Lower	80.74	15.24	39	81.48	19.28	23	81.02	16.99	62
Middle	69.88	20.31	8	88.71	10.42	56	86.36	13.42	64
Total	78.89	16.86	47	86.61	13.89	79	83.73	15.45	126

The independent variables of teacher race and teacher social class have
significant effects upon the congruence of the teachers' vocabulary usage
with their students' vocabulary knowledge. Both independent variables
produce large differences in congruence estimates. The difference of
more than five points between lower and middle class teachers is

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statistically reliable. The difference of approximately eight points between races is also reliable. In addition, the interaction effect produced by these variables is reliable. An examination of the within-cell means shows that black lower class teachers produce lower congruence in their vocabulary usage than do white middle class teachers. It is interesting that black middle class teachers produce even less congruence. It must be noted that although the sample size reported in the cell is for eight students, only one teacher is actually represented. This, of course, markedly biases the results of this analysis.

Judging from the lower class black and white teachers' means, it seems clear that the effect in the lower class is not due to race alone. In fact, since the black middle class value is represented by one teacher with eight pupils and all of the other cells represent more teachers, there is a distinct possibility that these effects are due primarily to the lower and middle social class differences rather than to the racial differences alone. This interpretation goes significantly beyond the data reported here, but in terms of the values in Table 2 it seems reasonable that the low mean congruence score for the black middle class teacher is not reliable, but biased by this particular teacher. Since there is no way to accurately assess this statement, it must be recognized that it is, to some degree, conjecture and may not be generalizable to black middle class teachers in other groups. The difference, in fact, is so large for this single teacher that there is a possibility her score could lower the mean of the black teachers sufficiently that a difference between races seems apparent and reliable when it is actually not. Again, this inter-pretation must be considered cautiously since the data represent so few cases.

The means for the analysis by teacher race and grade level are shown in Table 3. It is apparent that there is a large difference between the congruence estimates for kindergarten and first grade. The mean difference in congruence estimates between kindergarten and first grade of approximately 14 points is statistically reliable. This may mean that kindergarten teachers are less likely to use words at the vocabulary level of their students than first grade teachers. The reason behind the large difference between the grades is, of course, impossible to determine from the data presented here, but it is probably a function of the degree to which the children have had practice in defining words. For example, the kindergarten children have certainly heard most of the words used by their teachers and have some intuitive hunch as to the meaning of the words. They are, however, unable to offer satisfactory definitions for the words. This is evidenced by the results reported earlier indicating a discrepancy between the words reported as known but for which adequate definitions could not be offered by the kindergarteners. What this might mean is that the kindergarteners are, indeed, able to understand the words but have simply not gained a facility in providing a verbal definition for the words. This interpretation is consistent with Dale's (Dale, 1958) analysis of vocabulary development into four relatively discrete stages

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Table 3

MEANS AND STANDARD DEVIATIONS OF CONGRUENCE

SCORES BY TEACHER RACE AND GRADE LEVEL

	Teacher Race								
Grade	Black			White			Total		
	Mean	S.D.	n	Mean	S.D.	n	Mean	S.D.	n
K	74.12	17.68	32	79.47	16.97	32	76.80	17.40	64
First	89.07	8.88	15	91.47	8.55	47	90.89	8.61	62
Total	78.89	16.86	47	86.61	13.89	79	83.73	15.45	126

and also with the developmental notion that a child learns a "receptive" language prior to learning an "expressive" language.

The interaction between teachers' race and grade level is statistically reliable. The effect is not large enough, however, to have much practical significance. In view of the fact that in all of the classrooms with black teachers there were only black students, the effect becomes even more difficult to interpret in a meaningful way.

The results of the analysis by teacher race and child social class are presented in Table 4. The differences in congruence scores as a function of both teacher race and child social class and their inter- action are statistically reliable. Interpretation of the main effect

Table 4

MEANS AND STANDARD DEVIATIONS OF CONGRUENCE

SCORES BY TEACHER RACE AND CHILD SOCIAL CLASS

Child's Social Class	Teacher Race								
	Black			White			Total		
	Mean	S.D.	n	Mean	S.D.	n	Mean	S.D.	n
Lower	76.88	16.92	33	79.95	15.47	39	78.54	16.12	72
Middle	83.64	16.30	14	93.10	8.06	40	90.65	11.41	54
Total	78.89	16.86	47	86.61	13.89	79	83.73	15.45	126

differences is straightforward. That is, the race of the teacher makes a difference in vocabulary congruence scores with the white teacher achieving more congruence than the black teacher. The social class of the child makes a difference in the congruence scores with the middle class child achieving more congruence with his teachers than the lower class child. The interaction effect is clear enough that interpretation is meaningful. The white teacher produces more congruence with middle class children than she does with lower class and more than the black teacher does with either class of youngster. The black teachers produce the least amount of congruence but more with the middle class youngster than the white teachers do with the lower class youngster. The most significant aspect of the interaction is, for this sample, that the white teachers and middle class youngsters were in the most congruence while black teachers with lower class youngsters were in the least congruence. Although there is some confounding of the dimensions because there are no white children in the black teacher's classes,

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the results are significant because of the marked difference produced
as a function of social class alone.

Interpretation of Table 5 is straightforward. The indication is
simply that the black children sampled for this study knew fewer words
used by their teachers than did the white children for their teachers.
The difference seems to be more a function of the child's race than
it does of the teachers but this cannot be definitely stated since
there were no white children in the black teachers' classrooms.

Table 5

MEANS AND STANDARD DEVIATIONS FOR CONGRUENCE

SCORES BY TEACHER'S RACE AND CHILD'S RACE

Child's Race	Teacher Race								
	Black			White			Total		
	Mean	S.D.	n	Mean	S.D.	n	Mean	S.D.	n
Black	78.89	16.85	47	79.56	15.32	27	79.14	16.21	74
White				90.27	11.61	52	90.27	11.61	52
Total	78.89	16.86	47	86.61	13.89	79	83.73	15.45	126

In view of the emphasis currently made on the importance of maintaining
the black child's "home" language in order to facilitate communication, it
is particularly interesting that the black children in this study exhibit
no more difficulty with the white teachers than they do with the black.

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This suggests, of course, that race is not the critical variable in communication difficulties. The results reported in Table 6 suggest that the critical variable is social class background rather than race. If these results are replicable, then perhaps the current push made by many that race is an important part of communication is not tenable.

Table 6

MEANS AND STANDARD DEVIATIONS BY

TEACHER RACE AND CHILD RACE AND SOCIAL CLASS

	Teacher Race								
Child's race and social class	Black			White			Total		
	Mean	S.D.	n	Mean	S.D.	n	Mean	S.D.	n
Black Low	76.88	16.92	33	77.04	15.49	22	76.94	16.21	55
Black Middle	83.64	16.30	14	90.60	8.95	5	85.47	14.82	19
White Low				83.71	15.07	17	83.71	15.07	17
White Middle				93.46	13.46	35	93.46	13.46	35
Total	78.89	16.85	47	86.61	13.88	79	83.73	15.45	126

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The second order interaction appearing in Table 6 is large
enough to be of importance. The interaction is among the variables
of teacher race, child race, and child social class and supports
the interpretation that differences are larger as a result of
social class than they are as a function of race. This is partic-
ularly in evidence for the white teachers since both white and
black pupils are represented as members of their classrooms. In-
spection of the table reveals that in all cases the average
congruence score for the middle class pupil is higher than it is
for the lower class pupil. Furthermore, the black middle class
pupils, when with white teachers, average higher than do the lower
class white pupils when with the same white teachers. What this
means is probably that, of the variables studied here, the social
class of the student is the most sensitive predictor of whether or
not he will know the words used by his teacher. The generalization
holds, to some degree, regardless of either the pupils' race or the
teachers' race although there is some differential effect produced
when middle class students are with white teachers. The values
producing the language differences are probably more a function of
social class than of race since the white teachers were about
evenly split on their social class and this split produced no
apparent difference. Unfortunately, the split for the black teachers
was not so even and there were no white children in their classrooms.
Therefore, this generalization must be made with extreme caution.

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Conclusions

The study was designed to accomplish two aims. First, an attempt was made to list the general vocabulary of kindergarten and first grade teachers and to determine if that vocabulary was known to their pupils. Second, an attempt was made to assess the effects of socio-economic background, race, and grade level of both teachers and pupils with respect to the degree of congruence in words used by teachers that were known to their pupils.

The general vocabulary used in normal classroom activity by the kindergarten and first grade teachers in this study is generally at a level known to their pupils. In fact, the words most frequently used by these teachers are also the words most frequently used by the population at large. Almost all of the words appearing on the high frequency of usage lists for · study are listed in the Thorndike-Lorge list of 500 most . ently occurring words. This, coupled with the relatively high p. . ntage of children knowing the high frequency words clearly suggests that, in general, the teachers are using words known to the majority of their pupils.

The degree of congruence in the words used by teachers that were known by their pupils was assessed as a function of the social class background, race, and grade level of both teachers and pupils. The results, although not completely clear-cut, are as might be expected. The white children when with a white teacher result in the highest degree of vocabulary congruence and black children with a black teacher the lowest.

The interpretation of this finding is somewhat clouded by the fact that there were no white children in the black teachers' class-rooms. This meant that the interaction between race of teacher and race of child could not be completely interpreted. There is a clear indication, however, that there are differences resulting from a division into groups according to race.

An important finding was that there is apparently more difference in the vocabulary congruence resulting from social class background than from racial categories. Furthermore, no difference appeared for the black children as a function of teacher race. What this means is that the black children are able to deal adequately with the vocabulary used by their white teachers. In fact, it may be easier for them to deal with the white teacher's vocabulary than it is for them to handle the black teacher's vocabulary. Again, the interpretation is clouded because there were no white children with black teachers.

Two important methodological findings were noted. First, it is possible, by using wireless microphones, to produce audio recordings of classroom teachers with sufficient clarity to list the words the

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teachers use in normal classroom activity. Although there is a high
level of background noise due to the children in the classroom, by
careful placement of the microphone on the teacher, satisfactory
recordings can be made. Second, it was noted that a fifty word
vocabulary list could be used for testing of word knowledge with
kindergarten and first grade youngsters and that the time required
was, in almost all cases, a half hour or less. Although kinder-
garten children have a tendency to say they know words which further
probing reveals they don't know, first graders tend to be quite
frank in admitting they don't know a word.

As a result of the study, the following recommendations are
made. The study is probably not worth replicating. The amount of
time involved in producing the vocabulary lists is excessive for
the amount of knowledge gained. It might be possible to produce
reliable lists by taking shorter samples from the teachers, but
the reliability of the frequency counts would be questionable. An
alternative and probably productive project could be designed to
clear up the unanswered question resulting from the absence of white
children with black teachers in this sample. That is, since it
was impossible to completely assess the effects of combinations of
teacher race and pupil race, a study might be designed to assess
these variables. The words used in such a study might be drawn from
standard word lists such as those by Dale or Thorndike and Lorge or
they might be taken from the lists resulting from this study.
Although the notion of "congruence" in teachers' word usage and
children's knowledge of words could not be completely assessed in
this way, it would be possible to assess the effects of varying social
and racial subgroups or classes on word knowledge.

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Word	Kindergarten		First Grade	
	Fall	Spring	Fall	Spring
did	--	--	--	--
didn't	--	--	100	--
different	75	75	--	--
do(ing)	--	--	--	100
does	--	--	80	100
doesn't	--	57	40	--
don't	--	--	60	--
down	--	100	100	100
everybody	--	62	--	--
find	--	86	--	100
finger	--	100	--	--
finish(es)	--	--	100	--
first	50	87	--	100
five	--	100	--	100
floor	100	100	--	100
for	--	--	--	--
four	--	100	100	100
from	--	--	--	--
get(ting)	100	87	100	100
girl(s)	--	100	--	100
give(n,ing)	75	86	100	100
go(ing)	--	100	--	--
good	--	89	100	--
got(ten)	75	75	--	--
had	--	--	--	100
hand(s)	83	100	--	100
has	--	--	80	100
have(ing)	75	--	--	--
he	40	--	--	73
hear(s,ing)	--	100	100	100
help	100	100	100	--
her	0	86	80	--
here	--	--	80	100
him	--	78	--	100
his	25	--	--	--
home	100	86	--	100
how	--	78	100	100

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Word	Kindergarten		First Grade	
	Fall	Spring	Fall	Spring
I	--	62	--	--
I'll	--	--	--	--
I'm	40	--	80	--
if	--	--	60	83
in	50	--	100	--
is	--	50	50	86
it	25	25	100	100
it's	0	--	--	75
just	--	50	50	--
know	50	78	--	87
large(er,est)	--	--	--	--
leave(ing)	100	100	--	92
left	--	86	--	100
let	--	--	--00	100
let's	--	--	22	--
letter	100	89	100	100
like	100	--	100	100
line	90	87	100	--
listen(ing)	100	--	100	--
little	--	100	--	100
long	100	--	100	86
look(s,ing)	--	100	100	100
make	100	100	--	--
man	100	--	--	--
many	50	75	67	86
may	--	75	00	100
me	80	50	--	--
minute(s)	75	--	78	100
more	--	87	--	93
my	--	--	--	--
name	--	--	100	--
need	--	87	--	83
next	75	62	--	--
nice(est,ly)	--	--	100	--
no	--	--	100	100
not	--	--	--	--
now	50	--	--	87
number	--	62	100	--

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Word	Kindergarten		First Grade	
	Fall	Spring	Fall	Spring
of	20	--	--	--
off	--	87	80	100
oh	--	43	25	100
o.k.	75	--	100	100
on	--	--	80	100
one	--	100	--	100
or	25	33	--	67
other	--	100	40	--
our	60	--	--	80
out	80	100	--	100
over	67	--	--	100
page	--	--	--	100
paper	--	100	100	--
penny(ies)	100	--	--	100
people	82	75	100	--
pick	--	--	--	--
picture	--	--	--	--
play(ing)	100	100	100	100
please	100	94	--	--
plus	--	--	--	--
put(ting)	100	.-	80	100
quiet(ly,est)	100	100	100	100
read	--	100	100	100
ready	--	100	80	100
remember	89	--	--	--
right	80	--	--	100
said	60	--	--	--
say(s,ing)	75	100	--	--
see	--	--	80	100
sentence	0	22	--	100
set	75	44	--	40
she	40	62	--	--
short	100	--	100	100
show(ing)	--	--	100	100
side	80	--	100	--
sit(ting)	--	100	--	100
small	--	--	100	100
so	--	78	33	--
some	--	89	60	--
something	60	--	100	100

Word	Kindergarten		First Grade	
	Fall	Spring	Fall	Spring
space(s)	83	75	75	--
square	60	--	--	--
stand(s)	100	100	--	100
start(s,ing)	--	75	80	100
stop(s)	100	100	--	100
story(ies)	--	100	100	100
table	--	100	100	100
take(n,ing)	--	100	100	86
talk(er,ing)	--	100	--	--
tell(s)	--	100	--	93
than	--	25	50	--
that	--	75	100	83
that's	--	--	--	--
the	--	57	--	--
their	--	--	--	--
them	20	71	--	--
then	--	67	60	80
there	83	78	89	83
these	--	87	100	93
they	25	50	75	87
thing(s)	38	50	--	86
think(ing)	--	100	--	100
this	--	75	--	--
those	60	--	--	67
three	67	89	--	--
time	100	100	--	100
to	--	--	--	--
today	78	87	89	100
together	--	86	100	100
too	--	--	--	37
top	60	100	100	100
tree	--	--	100	--
try(ied,ies)	80	75	100	100
turn	--	100	100	100
two	100	100	--	100
up	--	100	100	100
us	--	62	--	71
use(ing,d)	60	87	--	--
very	60	--	--	100

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Word	Kindergarten		First Grade	
	Fall	Spring	Fall	Spring
wait	100	86	--	--
walk	--	100	100	--
want	75	89	--	100
was	20	75	--	100
way	75	57	--	--
we	--	--	--	86
well	50	87	100	100
went	80	87	100	100
were	--	25	--	100
what	80	62	--	100
when	--	57	90	67
where	--	89	80	--
which	25	37	--	86
who	--	--	80	100
why	--	100	80	86
will	--	57	100	--
with	60	71	--	85
word	80	75	100	100
work	100	100	--	--
would	33	50	100	--
write	--	100	100	100
yes	80	100	--	100
you	87	87	--	100
you're	--	--	40	--
your	64	37	100	100

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Appendix B

Words known to children which were used by teachers at a frequency
of once or fewer times per thousand words.   (Classed as known if 2/3
or more of the children tested knew the word.)

absent	bear	carry(ied, ing)
accident	beautiful	case
across	bed	cat(s)
afraid	bees	catch
after	began	cement
afternoon	behind	chalk
air	believe	chase
airplane(s)	belong(s)	check
almost	beside(s)	chew
alone	best	chicken
already	bet	child
always	better	choose(s)
am	between	Christmas
angry	birthday	cigar
animal	black	circus
answer	blocks	clap
anybody	blow(ing)	class(es)
anymore	body	classroom
anyone	boots	clear
anyplace	break(ing)	clock
anything	bright	close(r, ly)
apologized	bring	clothespins
apple(s)	broken(n)	cloud(s, y)
arrow	brother	clown
asleep	brought	coat
attention	brown	coins
awake	build	collect(ing)
awful(ly)	building	cook(ed, ing)
baby(ies)	bunny	cookies
backwards	bus	copy(ied)
bacon	busy	corn
ball(s)	button	corner
band	cage	correct
bar	cake	cost
bark(ing)	candle	costume
baseball	cane	couldn't
bases	can't	cover(ed)
basket	capital	crayon
bat	car	cross
bathroom	care(ful, ly)	cry(ied, ing)
bathtub	carrots	cup

curl(s)	family(ies)	guess(ing)
curve	fast(er)	hair
cut	fat	Halloween
daddy	father	hamburger
dance(ing)	favorite	handwriting
dead	feathers	hang
dear	feed	hard
deer	feel(ing)	hasn't
dentist	feet	hat(s)
desk	fell	head(s)
dime	felt	heard
dirt(y)	few	heavy
dog	fight	heel
dollar	fine	hello
done	fire	hen
donkey	fire station	hide(den)
dot(s, ted)	fish	high
downstairs	fix(ing)	himself
downtown	flatten(ed)	hit(s)
drag	Florida	hole(s)
drank	flower	holler
draw(n)	fold	honey
drawer	folks	hop(s, ping)
drawings	follow(ed, s, ing)	hope
dress(ed)	food	horse
dry	fool	horseshoe
duck	forget(ting)	hose
earache	forty-one	hospital
early(ier)	found	hot(ter)
Easter	fox	house
eat(en)	fresh	hundred(s)
egg	frog	hungry(eir)
eighth	front	hurry
electric	froze	hurt
elevator	fry(ing)	hush
empty	fun	ice
end	funny	important
enjoy(ed)	fussing	Indian(s)
enough	game	inside
erase(ing)	garbage	instead
even	gas	into
every	gave	invite(d)
everyone	giant	iron(ing)
everything	gingerbread	isn't
excuse me	gone	jacket
exercise	grass	jay(s)
eyebrow	grew	job
face	ground	jump(ing)
fair	group	jungle
fairy	grow	keep
fall	grown up	keys

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kind(ly)	muscle	present
kiss(ed, ing, es)	music	president
kite	musical	pretend
lady(ies)	must	pretty
lake	nail(s)	probably
lamb	near(ly)	problem(s)
last	neighbor	promise(d)
late	new	proud
later	night	pull(s)
learn(ed, ing)	nine	punch (drink)
leg(s)	nobody	pup(py)
lesson(s)	noise(y)	purple
lettuce	nose	push(ing)
library	note	puzzle
light	nothing	quick(ly)
lips	o'clock	racing
list	ocean	rain(ing, ed)
locker	October	raincoat
lollypop	office	raise(ing)
loose	oil	rattle
lose(ing)	old(er)	reach(ing, ed)
loud	open(ed, s)	really
luck	outside	record
ma'am	oven	refrigerator
made	package(s)	regular
magic	paint(ing)	rest
mark	pajama(s)	return
markers	pan	ride(r, s)
mask	pancake	ring(ing)
match	parade	rock(s)
maybe	park(s)	room
meow(ing)	party(ies)	rooster
mess(ed)	pass(ed)	rope
middle	paste	rough
might(y)	pattern	round
milk	pay(ing)	rubber
mind	pencil	rug
nine	period	ruler
mirror	person	run(ning, s)
mistake	pet	safe
mix(ed)	piano	sail
mom	piece(s)	same
moment	pin(s, ing)	save
Monday	pink	saw
monkey	pitcher(s)	scare(d, ing)
morning	place(d)	school
move	plug(ged)	scratch
movie	point(ing)	scream(ing)
moving	pop(s, ping)	screen(ing)
mowing	post	seat
much	potatoes	second

seed(s)	springtime	through
seesaw	squirrel(s)	Thursday
sell	stack	tie
send	stage	tight(en)
seven	stamp	tiny
shade(d)	star	tiptoe
shake(ing, y)	station	tired
shampoo	stay	toe
shape	step(ped)	told
share	stick(s, y)	tomorrow
she's	still(ness)	took
sheep	stones	tools
sheet	store(s)	torn
shelf	straight	touch
shine(y)	straightened	towel
shoe	straws	toy(s)
shopping center	street	trace
shot	strike	track(s)
should	string(s)	traffic
shoulder	study(ied)	train
shout	stuff	trash
sick	summertime	trash can
silly	Sunday	treat(ing)
simple	sunshine	triangle
sing(ing)	surprised	trick
sink	sweet(ness)	tricycle(s)
scissors	sweetheart	trip
sister	swim	trouble
six	swing(s)	truck
sky	tag	trunk
sleep	tail	turtle
slide	tail	twenty
sloppy	tangerines	twice
slow(ly)	tape	umbrella
smash(ing)	tar	under
smile(ing)	taste	underlining
snow	teach	underneath
soft(ly)	teacher(s)	understand
soldier	tear(ing, s)	understood
somebody	teeny	unhappy
someone	teeth	uniform
sometime	telephone	upon
song	tent	upstairs
soon	terrible	vine
sorry	thank you	visit(s)
spanking	third	voice
splashing	thread	wagon
spring	throat(s)	wake

wasn't
waste(d, ing)
wastebasket
watch
water
watermelons
wear(ing)
weather
wedding
welcome
wet
wheel
whenever
wherever
white
wild
wind(y)
window
wink
wires
wish
without
woke
women
woods
worry
wow
wrap(ping)
wrong
wrote
yard
yardstick
yell
yellow
yesterday
yourself(ves)
zebra
zero

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Appendix C

Words not known to children which were used at a frequency of once or fewer times per thousand words. (Classed as not known if less than 2/3 of the children tested knew the word.)

abbreviation
able
act(ing)
activity
actually
adventure(s)
ago
ahead
Alaska
allow(ed)
also
altogether
amount
ankle
anyhow
anyway
applaud
arithmetic
aroma
art
attached
attendant
auditorium
azalea
bay
bill(s)
bloom(s, ing)
booklet
both
breath
breeze
cabinet
cafeteria
caught
cave
cavity
celebrated
certain
chance
change(s, ing, ed)
characters

chart
chestnut
choice
clam
classify
colt
complete
concrete
confusion
consonants
construction
contest
control
convince(ed)
cooperate
copper
country
crisp
cub
decided
degrees
delivers
describe(ing)
design
despite
dictionary
direction(s)
disappeared
display
disturb(ing)
doubt
dough
drove
each
easy(ily, ier)
edge
either
equivalent
especially
ever
exact(ly)

except
eyelid
fasten(ed)
fault
favor
fawn
fourth
full(ly)
geese
goes
gray
great(er)
greenish
guilty
held
hemlock
hive
holiday
hoof
idea
identify
illustrate
imagine
impolite
instructor(s)
interrupt
islands
judged
kin
knew
lack
language
lay(s, ing)
lean(ing)
less
liberty
lobster
lot
low(er)
main
majority

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mall
map
marvelou.
math
mathematics
Mayflower
meets
milk carton
mincemeat
misplaced
most
nation
neat
necessary(ily)
net(s)
nod
nostrils
notice(ed)
numerals
nurse
oak
object
officer
only
outfit
owl
own
palm
pardon me
part(s)
particular
peculiar
pegs
perfect(ly)
pine
plaid
poem
policeman
polite
position
prancing
prefer
preserves
quart
quite
raindrop
rear
reason
receiver
recognize(s)

remind(ed, s)
republic
review
rhythm stick
ribs
rid
route
row
ruin(ing)
Russia
sasafras
scar
scientist
scraps
sea
seen
select
shall
silver
sizzles
snore(ing)
solid
solve
sort
South Viet Nam
spark
spoil(ed)
spyglass
stem
stood
stray
subtraction
suggest(ed)
supervisor
suppose(d)
sure(ly)
suspect
syllable(s)
tan
taught
tests
there's
they're
they've
thick
thin
though
thought
'til
title

triangle (musical
  instrument)
type
undo
unkind
unless
until
unusual
usual(ly)
vacation
vase
vein(s)
vibration
view
vote(s)
Wednesday
week
weird
weren't
whatever
whether
whichever
while
whole
whose
wonder
wouldn't
wrist
yawn
year
yet

Appendix D

Words used by teachers at a frequency of once or fewer times per
thousand words for which test data on children was not taken.

above	bare	bother(ed, ing)
acceptable	basement	bought
ache	beach buggy	bounce
acorn	beads	bound
add	beak	bows
addition	bean(s)	brains
afterwards	beat	brand
against	been	brave
ain't	beg	Brazil
alike	begun	bread
allegiance	behave	breakfast
along	bell	breathe
America	below	brick(s)
among	bend(ing)	broom
ant(s)	bib	brush
anywhere	bicycle	bucket
apart	biddy	buckle
appeared	Bingo	built
apron	bit	burn
aquarium	bite	bush
aren't	bitter	butterflies
arm	bitcy	buy(ing)
arrnage	blackboard	buzzing
ash	blades	bye
assignment	blank	cabbage
astronaut	blanket	caboose
ate	blazing	calendar
attend	blessing	calf
attic	blimp	California
baby sitters	blink	came
backside	blocking	Canada
bad	blossoms	candidate
bags	blouse	captain(s)
baking	blueish	card
balance(ing)	blue jay	cast
bald	board	cause
balloon	boat	chain(s)
bandaids	bobbing	cheers
bandstand	boldly	chick
bang(ing)	born	chin
barbecue	borrow	chop(ping)

chose(n)	darling	exclamation
church	date	excuse
city	December	expect
clerk	decorate(d)	explain(ing)
climb(ing)	decorations	extra
clothes	deep	eyelash(es)
clover	destroy	fact
cold(er)	devils	fade(d)
collar	dictate	famed
column	die(d)	fan
combination	dim	far
comfortable	dinner	farm
comma	discover	farmer(s)
company	dish	fellows
compound	dishpan(s)	fern
conferences	divided	fertilizer
confused	do-dad	fever
container	doctor	fifteen
cone	doll	fifth
continue	dollies	fifty
cool(er)	door(s)	figure
cornstalk	doorbell(s)	fill(ed, ing)
corsage	drew	film
cot	drink	fingernail
cottoi ood	dried	Finland
cough(ed)	dropped	fireplace(s)
couple	drum(s)	fit(s)
courage	drum major	flag
course	duckling	glat
cousin	dump	flew
cow	during	flies
cowboy	dust	float
crab	dying	flour
cracked	ear(s)	fly(ing)
cranberry	eight	fog
crawl(ing)	eighteen	foot
crooked	elbow(s)	football
crosswalk	elect(ed)	forest
crown(ed)	election	forgot(ten)
crumbly	elephant	fork
crumply(ing)	eleven	forth
cube	emergency	fouled
cubby	enemy	fourteen
cubbyhole	England	frame
curious	entered	France
curtain	equation(s)	free
cushion	eraser	Friday
cute	evergreen	friend
dandruff	everyday	friendly
dangerous	everywhere	frighten(ed)
dark	excited	frost

fur	Hawaii	kid(s)
further	hay	kill
galls	he'll	kindergarten
garage	he's	kitten
garden	healthy	kitty
gate	heart	Kleenex
gay	helicopter	knee
gentle	here's	knob
gentlemen	herself	knock
ghost(s)	hi	knot
giraffe	hickory	ladder
glad	hill	lamp
gland	hinge	land
glass	hips	landed
gloves	hired	lantern(s)
glue(y)	history	lap(s)
goat	hook	laugh
goblin(s)	housewife	lavender
God	howling	lazy
gold	huckleberry	lead(s)
golf	humps	leader
goodbye	hunt(ing)	leaf
goodness	husband	leaves
goose	I'd	ledge
gracious	I've	lemon
grade	indeed	lid(s)
graders	indenting	lie
grandfather	India	lift
granny	indivisible	lighthouse
grape	insect	limbs
green	interest(ing)	lipstick
grocery	interruption	live(s, d)
grown	its	liver
guarding	itself	lock
guide	Jack-o-lantern	logs
gum(my)	jam	lost
gun(s)	jammed	lousy
hadn't	janitor	love
half	Japan	lovely
ham	jeep	lunch(es)
hammer	jelly	lunchroom
handful	jingle bells	machine
handkerchief	join	mad
hanger	July	maddening
happen(ed, ing)	jury	maid
hardly	justice	mail
hate	kangaroo	mailman
haunt(ing)	kept	majorette
haven't	kick	mama

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manners	necktie	phonics
manual	needle	phrases
maple	neigh	physical education
March	neither	pie
margin	next	pig
married	never	piglet
mash	nineteen	pigpen
masking	ninety	Pilgrim
mat(s)	ninth	pinch
matter	noon	pipe
May	nope	plainly
meant	North Carolina	plan
meantime	Norway	plank
meat	November	plant(s)
medium	nursery	plate
meeting	nut	playhouse
melody	of course	pledge
melted	often	plenty
member(s)	once	pocket
men	one-half	pocketbook
mention(ed)	onto	polar bear
merry-go-round	opposite	ponytail
message	orange	poor
messy	orchestra	popcorn
met	order(s)	poplar
Mexico	otherwise	portrait
mice	ought	possible
microphone	outline	poster
midnight	oval	postman
mild	overshadow	pot
milkman	Pacific Ocean	pour(ing)
minus	pad	practice
miss(ed, ing)	paddle	presently
misunderstood	paid	press
mittens	pain	printing
money	pair(s)	prize
month	pal(s)	project
moon	pardon	protect
mop	past	purr
moss	peace	push-up
motor	pear(s)	quarter(s)
mound	pecan	question(s)
mountain	peek(ing)	quit
mouse	peel(ing)	rabbit(s)
mouth	pegboard	racer
mushroom	peopled	races
mustn's	Pepsi Cola	racquet
myself	perfume	radish(es)
mystery	perhaps	rag
nature	pharynx	rainbow
neck	phone	rainhat

rainy
rake
ran
rang
range
rather
raw
ray(s)
real
realize
recorder(s)
rectangle
refreshment(s)
related
relative
reverse
reversal
riddle
rinse
road
roast
rode
role
roll
roller
roof
root(s)
rot
tub
rude
rumor
rush(ed)
sad
salvage
sand
Santa Clause
sap
sat
Saturday
sauce
scene
science
scientific
scissors
scotts
section
seem
sense(s)
separate
serve
service

seventeen
several
sew
she'll
shell
ship(s)
shirt(s)
shore
shouldn't
shovel
shut
shy
silently
since
sir
sixteen
sixteenth
sixty
sixty-five
sixty-one
size
skates
skin
skinny
skip
skirts
sleeve
sled
smart
smoke
smooth
snake
sniffed
snowshoe rabbit
socks
someplace(s)
someway
somewhere
son
sore
sour
south
Spain
spangled
speak
special
spell(ed)
spent
spill
splendid
split

spoke
spout
spread
squash(ing)
squat
squeeze
staple
state
stockings
stomach
stormy
stove
stretch
stripes
strong
stuck
stumbled
style
such
sucking
suit
sum
sumac
summer
sun
sunny
superman
sweater(s)
Sweden
sweep
swirled
swollen
sworn
tailgate
tap
teapot
television
ten
tennis
thank(s)
Thanksgiving
therefore
they'll
thirteen
thirty
thirty-two
threw
throw(n)
thumb
tint
tip

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tissue
toadstool
toasters
tonight
tossed
town
travel
true
tub
tug
tumbling
tummy
tune
T.V.
twelve
twenty-eight
twenty-five
twist
United States cf
    America
unplug
upper
upside
urged
vegetables
Viet Nam
village
Virginia
voiceless
vowel
wad(ding)
waist
wall
walnut
wander
warm
wash(ed, ing)
Washington
wave
we'd
we've
whale
where's
whine
whipped
whisker
whisper
whistled
who's
whom
wide

wiggly
win(ner, ning)
wing
winter
wintertime
wipe
wireless
within
wobbly
won
wonderful
won't
wore
world
worms
wreck
wrinkle(d)
yeah
yonder
you'd
you'll
you've
young
zip(ping)

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